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TRANSMITTAL OF APPEAL BRIEF (Small Entity)

Docket No. 0603.00002

In Re Application Of: **Robert Gerald Lipmyer**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/729,052	December 5, 2003	Max H. Noori	010534	2855	9266

Invention: **FLEXIBLE PRINTED CIRCUIT CABLING SYSTEM FOR CRASH TEST DUMMY**

COMMISSIONER FOR PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on:

☒ Applicant claims small entity status. See 37 CFR 1.27

The fee for filing this Appeal Brief is: **$250.00**

☒ A check in the amount of the fee is enclosed.

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Signature

Dated: March 6, 2006

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on March 6, 2006.
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Signature of Person Mailing Correspondence

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cc:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit:	2855
Examiner:	M. Noori
Applicant(s):	Robert G. Lipmyer
Serial No.:	10/729,052
Filing Date:	December 5, 2003
For:	FLEXIBLE PRINTED CIRCUIT CABLING SYSTEM FOR CRASH TEST DUMMY

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

By Notice of Appeal filed January 4, 2006, Applicant has appealed the Final Rejection dated August 4, 2005 and submit this brief in support of that appeal.

REAL PARTY IN INTEREST

The real party in interest is the Assignee, First Technology Safety Systems, Inc.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences regarding the present application.

CERTIFICATE OF MAILING: (37 C.F.R. 1.8) I hereby certify that this paper (along with any paper referred to as being attached or ~~enclosed~~) is being deposited with the U.S. Postal Service with sufficient postage as First Class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on March 6, 2006, by Daniel H. Bliss.

STATUS OF CLAIMS

Claims 1 through 4 have been rejected.

Claims 5 through 7 have been allowed.

Claims 8 through 11 have been rejected.

Claims 12 through 16 have been allowed.

Claims 1 through 4 and 8 through 11 are being appealed.

STATUS OF AMENDMENTS

An Amendment Under 37 C.F.R. 1.116 was filed on November 4, 2005 in response to the Final Office Action dated August 4, 2005. An Advisory Action dated December 13, 2005, indicated that the request for reconsideration had been considered, but did not deem to place the application in a condition for allowance. The Advisory Action did not indicate, for purposes of appeal, whether the Amendment under 37 C.F.R. 1.116 would be entered. A Notice of Appeal, along with the requisite fee, was filed on January 4, 2006. The Appeal Brief, along with the requisite fee, is submitted herewith.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed subject matter is directed to a flexible printed circuit cabling system for a crash test dummy. [Referring to FIGS. 1 and 2, one embodiment of a flexible printed circuit cabling system 10, according to the present invention, is shown in operational relationship with a crash test dummy, generally indicated at 11.] (FIGS. 1 and 2; Specification, page 6, paragraph 10).

The flexible printed circuit cabling system includes at least one centralized data-receiving unit. [As illustrated in FIGS. 1 through 4, the flexible printed circuit cabling system 10 further includes a centralized data-receiving unit, generally indicated at 54, disposed within the torso of the crash test dummy 11. It should be appreciated that the centralized data-receiving unit 54 collects and stores data from the sensors 50 for subsequent processing.] (FIGS. 1 through 4; Specification, page 12, paragraph 18).

The flexible printed circuit cabling system includes a plurality of sensors arranged remotely from the at least one centralized data receiving unit to generate electrical signals of data pertaining to a vehicular collision. [The flexible printed circuit cabling system 10 includes at least one, preferably a plurality of sensors 50 operatively attached to the shoulder, elbow, and wrist of the arm assembly 24, H-point of the pelvis assembly 34, knee assembly 37, and ankle assembly 39. The sensors 50 may be of a type such as load cells, pressure sensors, accelerometers, and other sensors commonly used in vehicle collision testing. The sensors 50 generate an electrical signal as a result of the application of some physical force, acceleration, pressure, or other input. The sensors 50 are positioned remotely from the centralized data receiving unit 54, and the flexible printed circuit cables 52 extend in an umbilical manner between the sensors 50 and the centralized data receiving unit 54, allowing electrical signals from the sensors 50 to be transmitted to the centralized data receiving unit 54.] (FIGS. 1 and 2; Specification, pages 10 and 12, paragraphs 15 and 18).

The flexible printed circuit cabling system includes a plurality of flexible printed circuit cables electrically interconnecting the sensors and the at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit. [Referring to FIGS. 1 through 4, the flexible printed circuit cabling system 10

also includes at least one, preferably a plurality of flexible printed circuit cables 52. Each flexible printed circuit cable 52 is an array of conductors bonded to a thin dielectric film, and can undergo repeated flexing without failure. In one embodiment, the individual flexible printed circuit cables 52 measure approximately 0.15 inches wide, between 0.01 and 0.05 inches thick, and are between 1 to 4 feet in length. The flexible printed circuit cables 52 are electrically attached to individual sensors 50 in a suitable manner, allowing the cables 52 to receive and transmit electrical signals generated by the respective sensors 50.] (FIGS. 1 through 4; Specification, pages 10 and 11, paragraphs 16 and 17).

The sensors and the flexible printed circuit cables are disposed within an internal cavity of the crash test dummy. [In one embodiment, the entire length of each flexible printed circuit cable 52 is positioned within an internal cavity of the crash test dummy 11. Some of the cables 52 extend within the internal cavity between the torso and the head assembly 12. It should be appreciated that the flexible printed circuit cables 52 are much lighter and more compact than conventional cabling. It should also be appreciated that the flexible printed circuit cabling system 10 increases the biofidelity of the crash test dummy 11.] (FIGS. 1 through 4; Specification, pages 11 and 12, paragraph 17).

The at least one centralized data receiving unit is disposed within the internal cavity of the crash test dummy. [As illustrated in FIGS. 1 through 4, the flexible printed circuit cabling system 10 further includes a centralized data-receiving unit, generally indicated at 54, disposed within the torso of the crash test dummy 11.] (FIGS. 1 through 4; Specification, page 12, paragraph 18).

The at least one centralized data receiving unit comprises a connection block and at least one of the flexible printed circuit cables being electrically connected to the connection

block. [The centralized data-receiving unit 54 further includes at least one connection block 70. The connection block 70 is generally rectangular in shape. The connection block 70 is connected to the docking station 60 by suitable means such as fasteners 71. The connection block 70 also includes at least one, preferably a plurality of pin receptacles 72. The flexible printed circuit cables 52 are electrically connect to the connection block 70 via the pins 53 and pin receptacles 72.] (FIGS. 1 through 4; Specification, page 13, paragraph 20).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The ground of rejection to be reviewed on appeal is whether the claimed invention of claims 1 through 4 and 8 through 11 is obvious and unpatentable under 35 U.S.C. § 103 over Wiley et al. (U.S. Patent No. 5,018,977) in view of Stopper (U.S. Patent No. 4,845,315).

ARGUMENT

Claims Not Obvious or Unpatentable Under 35 U.S.C. § 103

As to patentability, 35 U.S.C. § 103 provides that a patent may not be obtained:

> If the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Id.

The United States Supreme Court interpreted the standard for 35 U.S.C. § 103 in Graham v. John Deere, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). In Graham, the Court stated that under 35 U.S.C. § 103:

> The scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined. 148 U.S.P.Q. at 467.

Using the standard set forth in Graham, the scope and content of the prior art relied upon by the Examiner will be determined.

As to the primary reference applied by the Examiner, U.S. Patent No. 5,018,977 to Wiley et al. discloses a motorcycle accident simulating test dummy. A test dummy 1 has a head means 7, neck means 8, body means 9, limb means 11, and joint means 18. The dummy 1 also includes a variety of test sensing means, such as first sensor means 23 operable to sense stress and/or strain imposed on the limb means 11, and a second sensor means 24 operable to sense stress and/or strain imposed on the joint means 18. Also, the dummy 1 includes a data receiving and storage means 25 operable to receive and store data signals from the first and second sensor means 23, 24. Leads 28 transmit signals from the first and second sensor means 23, 24 to the data receiving and storage means 25.

As to the secondary reference applied by the Examiner, U.S. Patent No. 4,845,315 to Stopper discloses a cable system. The cable system includes a variety of components including a flexible printed circuit.

Claims 1 through 4

Claim 1 claims the present invention as a flexible printed circuit cabling system for a crash test dummy including at least one centralized data-receiving unit and a plurality of sensors arranged remotely from the at least one centralized data receiving unit to generate

electrical signals of data pertaining to a vehicular collision. The flexible printed circuit cabling system also includes a plurality of flexible printed circuit cables electrically interconnecting the sensors and the at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit.

The United States Court of Appeals for the Federal Circuit (CAFC) has stated in determining the propriety of a rejection under 35 U.S.C. § 103, it is well settled that the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 U.S.P.Q. 657 (Fed. Cir. 1985); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). The law followed by our court of review and the Board of Patent Appeals and Interferences is that " [a] prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Rinehart, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (CCPA 1976). See also In re Lalu, 747 F.2d 703, 705, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.")

As to the differences between the prior art and the claims at issue, the primary reference to Wiley '977 merely discloses a test dummy with sensor means, a data receiving and storage means, and leads interconnecting the sensor means and data receiving and storage means. Wiley '977 lacks a plurality of flexible printed circuit cables electrically interconnecting sensors

and at least one centralized data receiving unit to transmit electrical signals from the sensors to the at least one centralized data receiving unit. Contrary to the Examiner's contention, there is not a plurality of flexible cables 28. In Wiley '977, the leads 28 are wires that are generically described and are never referred to as flexible printed circuit cables.

The secondary reference to Stopper '315 merely discloses a cable system for a computer and switching mainframe connection system including a flexible printed circuit. Stopper '315 lacks at least one centralized data-receiving unit and a plurality of sensors arranged remotely from the at least one centralized data receiving unit to generate electrical signals of data pertaining to a vehicular collision. In Stopper '315, the flexible printed circuit is not used to interconnect sensors and a data receiving unit to transmit signals of data pertaining to a vehicular collision.

As to the level of ordinary skill in the pertinent art, in Wiley '977, a test dummy has sensor means, a data receiving and storage means, and leads interconnecting the sensor means and data receiving and storage means. In Stopper '315, a cable system for a computer and switching mainframe connection system including a flexible printed circuit. However, there is absolutely no teaching of a level of skill in the crash test dummy art that a flexible printed circuit cabling system for a crash test dummy includes a plurality of flexible printed circuit cables electrically interconnecting sensors and at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit. The Examiner may not, because he doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. See In re Warner, 379 F. 2d 1011, 154 U.S.P.Q. 173 (CCPA 1967).

The Examiner has adduced no factual basis in the record to support his position

that it would have been obvious to modify the test dummy of Wiley '977 utilizing the teachings of the cable system of Stopper '315 by providing it with printed circuit cables in order to enable compaction and allow for the making of calculations advanced, reliable and efficient manner. The Examiner's stated conclusion of obviousness is based on speculation and hindsight reconstruction of the claimed invention. As such, there is no suggestion or motivation in the art for combining Wiley '977 and Stopper '315 together.

Even if Wiley '977 and Stopper '315 could be combined or modified, it would not teach a flexible printed circuit cabling system for a crash test dummy having at least one centralized data-receiving unit, a plurality of sensors arranged remotely from the at least one centralized data receiving unit to generate electrical signals of data pertaining to a vehicular collision, and a plurality of flexible printed circuit cables electrically interconnecting the sensors and the at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit as claimed by Applicant.

Further, the CAFC has held that "[t]he mere fact that prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification". In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). The Examiner has failed to show how the prior art suggested the desirability of modification to achieve Applicant's invention. Thus, the Examiner has failed to establish a case of prima facie obviousness.

As stated in the Background of the Invention section of the present application, vehicle collision test engineers design crash test dummies with a total weight, center of gravity, and flexibility similar to that of a human body so as to increase the biofidelity of the crash test dummy. However, the cables that connect the sensors to the DAS often degrade the biofidelity of

the crash test dummies. More specifically, the configurations used are usually heavy, bulky umbilical cable systems extending out of the crash test dummy to the DAS. Since there can be many sensors inside the crash test dummy, there can be a large number of heavy, bulky cables extending out of the crash test dummy, thereby adversely affecting the dummy's center of gravity and weight distribution. Therefore, there is a need in the art to provide a lightweight, compact cabling system for use in a crash test dummy so that biofidelity of the crash test dummy is improved.

The present invention sets forth a unique and non-obvious combination of a flexible printed circuit cabling system for a crash test dummy having at least one centralized data-receiving unit, a plurality of sensors arranged remotely from the at least one centralized data receiving unit to generate electrical signals of data pertaining to a vehicular collision, and a plurality of flexible printed circuit cables electrically interconnecting the sensors and the at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit. Advantageously, the flexible printed circuit cabling system for a crash test dummy has flexible printed circuit cables that are much lighter than conventional cables, are more compact such that they can be largely positioned within an internal cavity of the crash test dummy, improves biofidelity, allows more sensors to be used in the crash test dummy, reduces time spent in preparing the test, and makes maneuvering the crash test dummy more convenient.

Against this background, it is submitted that the present invention of claims 1 through 4 is not obvious in view of a proposed combination of Wiley '977 and Stopper '315. The references fail to teach or suggest the combination of the flexible printed circuit cabling

system for a crash test dummy of claims 1 through 4. Therefore, it is respectfully submitted that claims 1 through 4 are not obvious and are allowable over the rejection under 35 U.S.C. § 103.

Claims 8 through 11

As to claim 8, claim 8 claims the present invention as a crash test dummy that includes a body and a plurality of remote sensors operatively attached to the body and capable of generating electrical signals of data relating to a vehicular collision. The crash test dummy also includes at least one centralized data receiving unit positioned away from the remote sensors and capable of receiving the electrical signals of data relating to a vehicular collision. The crash test dummy further includes a plurality of flexible printed circuit cables electrically interconnecting the remote sensors and the at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit.

As to the differences between the prior art and the claims at issue, the primary reference to Wiley '977 merely discloses a test dummy with sensor means, a data receiving and storage means, and leads interconnecting the sensor means and data receiving and storage means. Wiley '977 lacks a crash test dummy having a plurality of flexible printed circuit cables electrically interconnecting remote sensors and at least one centralized data receiving unit to transmit electrical signals from the sensors to the at least one centralized data receiving unit. Contrary to the Examiner's contention, there is not a plurality of flexible cables 28. In Wiley '977, the leads 28 are wires that are generically described and are never referred to as flexible printed circuit cables.

The secondary reference to Stopper '315 merely discloses a cable system for a computer and switching mainframe connection system including a flexible printed circuit.

Stopper '315 lacks a crash test dummy having a body, at least one centralized data-receiving unit, and a plurality of remote sensors operatively attached to the body and arranged remotely from the at least one centralized data receiving unit to generate electrical signals of data pertaining to a vehicular collision. In Stopper '315, the flexible printed circuit is not used to interconnect sensors of a crash test dummy body and a data receiving unit to transmit signals of data pertaining to a vehicular collision.

There is absolutely no teaching of a level of skill in the crash test dummy art that a crash test dummy has a body, a plurality of remote sensors operatively attached to the body and capable of generating electrical signals of data relating to a vehicular collision, at least one centralized data receiving unit positioned away from the remote sensors and capable of receiving the electrical signals of data relating to a vehicular collision, and a plurality of flexible printed circuit cables electrically interconnecting the remote sensors and the at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit. The Examiner may not, because he doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. See In re Warner, 379 F. 2d 1011, 154 U.S.P.Q. 173 (C.C.P.A. 1967).

The Examiner has adduced no factual basis in the record to support his position that it would have been obvious to modify the test dummy of Wiley '977 utilizing the teachings of the cable system of Stopper '315 by providing it with printed circuit cables in order to enable compaction and allow for the making of calculations advanced, reliable and efficient manner. The Examiner's stated conclusion of obviousness is based on speculation and hindsight reconstruction of the claimed invention. As such, there is no suggestion or motivation in the art for combining Wiley '977 and Stopper '315 together.

A rejection based on § 103 must rest on a factual basis, with the facts being interpreted without a hindsight reconstruction of the invention from the prior art. Thus, in the context of an analysis under § 103, it is not sufficient merely to identify one reference that teaches several of the limitations of a claim and another that teaches several limitations of a claim to support a rejection based on obviousness. This is because obviousness is not established by combining the basic disclosures of the prior art to produce the claimed invention absent a teaching or suggestion that the combination be made. Interconnect Planning Corp. v. Fiel, 774 F.2d 1132, 1143, 227 U.S.P.Q. (BNA) 543, 551 (Fed. Cir. 1985); In re Corkhill, 771 F.2d 1496, 1501-02, 226 U.S.P.Q. (BNA) 1005, 1009-10 (Fed. Cir. 1985). The relevant analysis invokes a cornerstone principle of patent law:

> That all elements of an invention may have been old (the normal situation), or some old and some new, or all new, is . . . simply irrelevant. Virtually all inventions are combinations and virtually all are combinations of old elements. Environmental Designs v. Union Oil Co. of Cal., 713 F.2d 693, 698 (Fed. Cir. 1983) (other citations omitted).
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> ***
>
> A patentable invention . . . may result even if the inventor has, in effect, merely combined features, old in the art, for their known purpose without producing anything beyond the results inherent in their use. American Hoist & Derek Co. v. Sowa & Sons, Inc., 220 U.S.P.Q. (BNA) 763, 771 (Fed. Cir. 1984) (emphasis in original, other citations omitted).

As the Court of Appeals for the Federal Circuit recently noted, "[w]hen a rejection depends upon a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references." Ecolochem, Inc. v. Southern Calif. Edison, 56 U.S.P.Q. 2d 1065, 1073 (Fed. Cir. 2000). Here, there is simply no motivation provided in Wiley '977 or Stopper '315 to combine any of their teachings.

As stated in the Background of the Invention section of the present application, vehicle collision test engineers design crash test dummies with a total weight, center of gravity, and flexibility similar to that of a human body so as to increase the biofidelity of the crash test dummy. However, the cables that connect the sensors to the DAS often degrade the biofidelity of the crash test dummies. More specifically, the configurations used are usually heavy, bulky umbilical cable systems extending out of the crash test dummy to the DAS. Since there can be many sensors inside the crash test dummy, there can be a large number of heavy, bulky cables extending out of the crash test dummy, thereby adversely affecting the dummy's center of gravity and weight distribution. Therefore, there is a need in the art to provide a lightweight, compact cabling system for use in a crash test dummy so that biofidelity of the crash test dummy is improved.

The references, if combinable, fail to teach or suggest the combination of a crash test dummy having a body, a plurality of remote sensors operatively attached to the body and capable of generating electrical signals of data relating to a vehicular collision, at least one centralized data receiving unit positioned away from the remote sensors and capable of receiving the electrical signals of data relating to a vehicular collision, and a plurality of flexible printed circuit cables electrically interconnecting the remote sensors and the at least one centralized data receiving unit to transmit the electrical signals from the sensors to the at least one centralized data receiving unit as claimed by Applicant.

Obviousness under § 103 is a legal conclusion based on factual evidence (In re Fine, 837 F.2d 1071, 1073, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988), and the subjective opinion of the Examiner as to what is or is not obvious, without evidence in support thereof, does not suffice. Since the Examiner has not provided a sufficient factual basis which is supportive of his

position (see In re Warner, 379 F.2d 1011, 1017, 154 U.S.P.Q. 173, 178 (C.C.P.A. 1967), cert. Denied, 389 U.S. 1057 (1968)), the rejection of claims 8 through 11 is improper.

Against this background, it is submitted that the present invention of claims 8 through 11 is not obvious in view of a proposed combination of Wiley '977 and Stopper '315. '458. The references fail to teach or suggest the combination of the crash test dummy of claims 8 through 11. Therefore, it is respectfully submitted that claims 8 through 11 are not obvious and are allowable over the rejection under 35 U.S.C. § 103.

CONCLUSION

In conclusion, it is respectfully submitted that the rejection of claims 1 through 4 and 8 through 11 is improper and should be reversed.

Respectfully submitted,

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CLAIMS APPENDIX

The claims on appeal are as follows:

1. A flexible printed circuit cabling system for a crash test dummy comprising:

at least one centralized data-receiving unit;

a plurality of sensors arranged remotely from said at least one centralized data receiving unit to generate electrical signals of data pertaining to a vehicular collision; and

a plurality of flexible printed circuit cables electrically interconnecting said sensors and said at least one centralized data receiving unit to transmit the electrical signals from said sensors to said at least one centralized data receiving unit.

2. A flexible printed circuit cabling system as set forth in claim 1 wherein said sensors and said flexible printed circuit cables are disposed within an internal cavity of the crash test dummy.

3. A flexible printed circuit cabling system as set forth in claim 2 wherein said at least one centralized data receiving unit is disposed within the internal cavity of the crash test dummy.

4. A flexible printed circuit cabling system as set forth in claim 2 wherein said at least one centralized data receiving unit comprises a connection block and at least one of said flexible printed circuit cables being electrically connected to said connection block.

8. A crash test dummy comprising:

a body;

a plurality of remote sensors operatively attached to said body and capable of generating electrical signals of data relating to a vehicular collision;

at least one centralized data receiving unit positioned away from said remote sensors and capable of receiving the electrical signals of data relating to a vehicular collision; and

a plurality of flexible printed circuit cables electrically interconnecting said remote sensors and said at least one centralized data receiving unit to transmit the electrical signals from said sensors to said at least one centralized data receiving unit.

9. A crash test dummy as set forth in claim 8 wherein said body has an internal cavity therein and said remote sensors and said flexible printed circuit cables are disposed within said internal cavity.

10. A crash test dummy as set forth in claim 8 wherein said at least one centralized data receiving unit is disposed within said internal cavity.

11. A crash test dummy as set forth in claim 8 wherein said at least one centralized data receiving unit comprises a connection block and at least one of said flexible printed circuit cables being electrically connected to said connection block.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None